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# A survey of information sources use by students involved in distance education

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A SURVEY OF INFORMATION SOURCES USED BY  
STUDENTS INVOLVED IN DISTANCE EDUCATION

A Thesis

Presented to

The Faculty of the School of Library  
and Information Science

In Partial Fulfillment  
of the Requirements for the Degree  
Master of Library Science

by

Melinda Stasch

December, 1994

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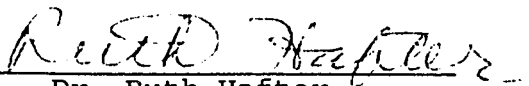
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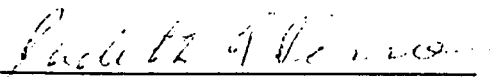
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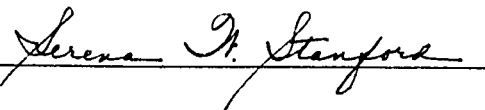
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## ABSTRACT

### A SURVEY OF INFORMATION SOURCES USED BY STUDENTS INVOLVED IN DISTANCE EDUCATION

by

Melinda Stasch

Distance education has become an increasingly common format for the delivery of instruction in higher education. If librarians are to meet the information needs of distance education students, they must understand how students select a source for information when they do not have access to the main library of the sponsoring institution. This thesis attempts to identify, by use of a survey, where these students seek information for their assignments when they are enrolled in postsecondary degree programs offered through some method of distance education. Results from the survey are analyzed to develop a profile of the information seeking patterns of distance students.



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## CHAPTER 1

### Introduction

Traditionally, programs of higher education have been characterized by students enrolling in a postsecondary course of study after graduation from high school and continuing in full-time study until the course work is completed. Curriculum is designed and presented by an instructor to a group of students located in classrooms on a central campus. Distance education is part of a trend towards developing nontraditional programs to meet the needs of a changing student population.<sup>1</sup> Its great growth and popularity can be attributed to the fact that students often wish to enroll in postsecondary studies long after high school graduation and seek a flexible program that can be coordinated with family and job responsibilities. New information technologies have also resulted in an increase in the availability and acceptance of distance education.<sup>2</sup> These technologies are being adapted to deliver curriculum

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<sup>1</sup> Distance education methods are applied to all levels: elementary, secondary and post-secondary. This paper will focus on the use of distance education in post-secondary education.

<sup>2</sup> Marcia A. Baird and Mavis K. Monson, "Distance Education: Meeting Diverse Learners' Needs in a Changing World," New Directions for Teaching and Learning 51 (Fall 1992): 65.

to students who are unable to participate in a traditional program. Although in the past distance education has been considered an alternative method of education, the current trend is to employ distance education as a primary mode.

"Distance education" is a term with various definitions. The technologies employed include television, telephone, video, mail, e-mail, audiographics, Internet, and computer conferencing.<sup>3</sup> Distance education courses can be fully independent study by individuals or computer conferences of several hundred people or televised instruction to thousands. Because several methods of distance education are included in this study, it is important to clarify the terms early in this document. A broad definition describes distance education as any program that delivers a curriculum to a learner when he is separated by location and/or time from the instructor.<sup>4,5</sup> Often included in a broad definition are nontraditional forms of education including: correspondence course, extension education, independent study, off-campus program, extramural

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<sup>3</sup> Thomas W. Wilkinson and Thomas M. Sherman, "Telecommunications-Based Distance Education: Who's Doing What?" Educational Technology 31 (November 1991): 56.

<sup>4</sup> Desmond Keegan, The Foundations of Distance Education (London, England: Croon Helm, 1986), 12.

<sup>5</sup> John R. Verduin, Jr. and Thomas A. Clark, Distance Education; The Foundations of Effective Practice (San Francisco, CA: Jossey-Bass, 1991), xi.

education, open university, university without walls, external degree, and multi-campus colleges. Each of these terms has specific characteristics that distinguish it from the others but are often included as part of the broader term of distance education.

Correspondence Education: Assignments are completed by the learner at his own pace and returned to the institution for grading. The institution then sends any subsequent assignments. The student has little or no communication with other students or the instructor.

Extension Education: Instruction is delivered beyond the confines of regular classes, either on- or off-campus, and may include evening classes, telecourses, seminars and institutes. Instruction can be offered as part of a degree program through a college or university or can be offered by private establishments for upgrading professional skills.

Independent Study: Individual learning, usually self-initiated, that may be directed or assisted by instructional staff through periodic consultations. Usually curriculum is tailored to fit the needs of the individual and is not a prepackaged program. Instruction may or may not be part of a degree program.

Off-Campus Program: A course of study offered by an established college or university which is moved away from the main campus to extend the school's scope or meet the

needs of rural students. Usually the format consists of a small group of students and an instructor meeting in a classroom.

Extramural Education: Programs of instruction which are held outside the traditional walls or boundaries of established schools. These can be formed by a cooperative effort of two or more schools. Usually instruction is delivered in a traditional classroom setting, adhering to a quarter or semester format.

Open University: A form of learning successful in Great Britain. The program is offered through higher education institutions with liberal enrollment policies that feature independent study and employ a variety of media for delivering curriculum. Courses are designed for nontraditional students who may or may not be working towards a degree. Students are usually assigned a tutor or mentor who guides them through their course of study.

University Without Walls: Another term describing Open University.

External Degree Program: This higher education program enables colleges and universities to offer degree programs to students who have taken courses outside the institution. Units of credit can be accumulated through a variety of methods.

Multi-Campus Colleges: These institutions offer degree

programs using alternative formats, such as accelerated semesters, branch sites or nontraditional methods of delivering curriculum. They can be considered distance education in that the students are distant from the main campus and its support services.

Distance education attracts a unique student population and its development is strongly influenced by changes in technology. The original demand for this program came from adults who wanted to improve and update their professional knowledge or to widen their intellectual horizons. These eager learners were prevented from enrolling in a traditional on-campus program because of job commitments, distance from an acceptable institution or the prohibitive costs. The earliest model of distance education in the United States developed at the turn of the century in the form of correspondence courses delivered by mail. Usually these courses were offered by independent organizations rather than established universities.<sup>6</sup> A steady expansion of distance education occurred without any radical change in organizational structure, but with gradually more sophisticated use of methods and media. Radio was employed in distance education in the 1920's. The telephone established communication between the student and

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<sup>6</sup> Borje Holmberg, Growth and Structure of Distance Education (London, England: Croom Helm, 1986), 16, 29.

instructor. When introduced, broadcast television was used as a delivery medium for distance education. Cable television offered instruction to a narrower audience. Video taped instruction then was used to deliver the curriculum. Computer mediated communication is in the forefront of distance education today.

Distance education students share several common characteristics. Wilkinson's survey describes them as adults, 25-35 years of age, who have a full-time job and family responsibilities, and attend school part-time.<sup>7</sup> The typical distance education student is self-directed in his studies. He has well-defined motives to continue his education, usually to improve his status at his current job or to change careers. This adult learner has a set learning style, desires feedback from instructors and wants immediate applicability of what he is learning.<sup>8</sup> Usually many years have passed since any prior school experience. He has little or no social contact with instructors or other students.<sup>9</sup> He usually is not a part of any campus information network. The distance learner typically

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<sup>7</sup> Wilkinson, 54.

<sup>8</sup> Malcolm S. Knowles, The Adult Learner: A Neglected Species. (Houston, TX: Gulf Publishing Co., 1984), 59.

<sup>9</sup> Elizabeth J. Burge, Relationships and Responsibilities: Libraries and Distance Educators Working Together (ERIC, ED 339 383, 1991), 10.

receives little or no orientation to the services that the school offers. If the distance student has never attended a traditional campus-based program, he may not be aware of any differences in his educational experience from students enrolled in an on-campus program.

Because the distance education student does not attend classes on a traditional campus, he may have less access to traditional support systems such as tutors or library services. These services are important elements of a quality program of higher education. The campus library may or may not offer extended services. Extended library services are defined as any means of extending the resources of a library to off-campus students.<sup>10</sup> Some methods employed by distance education programs to extend library services include phone requests for borrowing books, a toll-free telephone number for access to a reference librarian, the Online Public Access Catalog made available through remote access, housing a small collection of support material off-site, or making a cooperative arrangement with local public and academic libraries.

The reasons for the increased use of distance education

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<sup>10</sup> American Library Association, "ACRL Guidelines for Extended Campus Library Services," C & R L News 51 (April 1990): 354.



reflect changes in our society.<sup>11</sup> Many states, like California, will experience a great increase in the college-age population during the next decade.<sup>12</sup> State educational and fiscal leaders believe that spending costs can be effectively controlled by utilizing distance-learning technologies as an alternative to building additional campuses.

Distance education can also be more cost effective for students.<sup>13</sup> Although more adults are returning to school, they have limited time to devote to their education. They are motivated to change careers or improve their positions in their current jobs. Most must continue their employment to pay for their education. Few students have the good fortune to live near an institution offering a quality program that will fit into their busy lifestyle. These conditions create a demand for alternative forms of education. All projections show the use of distance

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<sup>11</sup> Terry Evans and Daryl Nation, eds., Reforming Open and Distance Education (London: St. Martin's Press, 1993), 7.

<sup>12</sup> Thomas J. DeLoughry, "Crucial Role Seen for Technology in Meeting Higher Education's Challenges," Chronicle of Higher Education (23 Sept. 1992), A22.

<sup>13</sup> John W. Weatherford, "Prerequisites for Campus-Quality Library Service to External Degree Programs," in Off-campus Library Services, ed., Barton M. Lessin (Metuchen, N.J.:Scarecrow Press, 1991), 3.

education will increase both in the number of offering institutions and in the number of courses available through distance education methods.<sup>14, 15</sup>

Distance education has been shown to be a growing phenomenon.<sup>16</sup> Students involved in distance education have been shown to have unique characteristics. Because of these factors, it is important to establish through research a body of knowledge which defines the basic elements of distance education and describes the behavior of its students. Traditional curriculum and services offered to a remote student through some form of technology may not produce the same academic experience as a traditional on-campus program. Knowledge gained from research of student behavior in a traditional, on-campus program may not adequately describe the behavior of the distance education student. Only additional research will indicate similarities and differences.

All programs of higher education require students to be able to research a topic and incorporate the information found into an original document. The campus library is designed to be a complete information resource for students.

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<sup>14</sup> Baird, 66.

<sup>15</sup> Wilkinson, 56.

<sup>16</sup> "The Wave of the Future: Distance Education," Au Courant, (Summer 1991): 14.

The information is tailored to complement and enhance the curriculum. Every effort is made to provide access to the material, students are instructed on developing research skills through bibliographic instruction, and professional librarians are available for individual assistance. If academic research is equally important in a program of distance education, how do distance students cope with the isolation from the resources and services of the campus library?

When distance students begin a research project, a preliminary step must be to identify information sources available in their own geographic area. Although most communities have public libraries, these institutions are not equipped to deal with the needs of students conducting scholarly research. If increasingly more students are studying through programs of distance education, will there be an increased burden on public libraries to meet the information needs of these students?

Identifying students' choices of information sources will give distance educators data they can use to identify gaps in the resource needs of their students. These data can be used to evaluate the extended services offered by the campus library. They will indicate if existing services are adequate and what sort of service, if any, will aid the student in accessing information at the sources he actually

uses. When distance educators have a clear understanding of where students are looking for information, librarians can tailor their services to enhance student performance and equip students to identify the best sources.

### Research Question

The research questions that this thesis seeks to address are: where do students look for information when they do not have direct access to the library of the institution sponsoring their program of distance education and what factors influence a student's choice of an information source? Within this framework research will also analyses what materials are used at the various sites, including any extended library services. Patterns related to gender or enrollment status will be identified.

This study attempts to develop survey data as the basis for analysis of these questions. In particular, it seeks to develop a description of student resource selection behavior that librarians can utilize in order to develop effective off-campus library services, resources, and programs.

## CHAPTER 2

### Review of the Literature

A literature review reveals that traditional library services are usually extended to the distance education students through telecommunication or branch sites or cooperative arrangements with other libraries. What is lacking in the literature is any in-depth analysis of whether this is a good solution for distance education students. This neglect is evident despite the fact that all writers agree that distance learners have instructional support needs that differ from traditional students.

A recurrent theme in the literature is the discussion of the need for improving library skills among all students (Breivik; Goodin; Kidd; Kaufman; Knowles; Shklanka). This lack of research skills limits students' ability to meet the demands of academic life and also inhibits them from partaking in life-long learning.

Much writing has been devoted to the topic of information seeking in general (Belkin; Dervin; Nilan; Ellis; Saracevic; Chatman). Usually an attempt is made to develop a generic model that can be used to describe all types of information seeking. Some studies have been devoted to information seeking behavior in academic libraries (Kuhlthau; Ford; Parrish; Miller). These studies

omit the process of source selection which must be first addressed by distance students. Once the student has identified an appropriate information source, he could be predicted to fit the behavior described because both on- and off-campus students are motivated by the same need to fulfill academic assignments.

The literature abounds with articles discussing the need to extend traditional library services to distance students, conforming to the Association of College and Research Libraries' guidelines and standards.<sup>17</sup> Most of the articles are descriptive and are tailored to local conditions (Cook; Kascus; Steffen; Weatherford). Slade has surveyed the major institutions in Canada involved in distance education and compared the types of extended services offered. From this research he has developed thirteen key ingredients that he feels must be included in quality, off-campus library services.<sup>18</sup> These are:

1. Availability of a core collection of relevant materials at remote course sites.
2. Delivery of additional material requested by staff or students.

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<sup>17</sup> American Library Association, 353-355.

<sup>18</sup> Alexander L. Slade, "Thirteen Key Ingredients in Off-Campus Library Services: A Canadian Perspective," in Off-Campus Library Services, ed. Barton M. Lessin (Metuchen, N.J.: Scarecrow Press, 1991), 161.

3. Reference queries answered by library staff.
4. Toll-free telephone line for access to library staff.
5. Advertisement of library services for the off-campus student.
6. Librarian assigned the responsibility of service to off-campus students.
7. Adequate support staff to meet the needs of the off-campus students.
8. Bibliographic instruction provided by librarian.
9. Online literature searches conducted for off-campus students on request.
10. Availability of interlibrary loan services.
11. Library services are free of charge.
12. Library staff undertakes needs assessments for off-campus courses to plan library services.
13. Periodic evaluation of library services to off-campus students.

Incorporating these elements into a program of library services would create an excellent resource for an off-campus student.

Burge has compiled results from a questionnaire

regarding the library needs of off-campus students.<sup>19</sup> From the data gathered she has made her recommendations for elements necessary in a quality library services program. The elements in her recommendations represent the seven components she believes must work in concert to achieve her "Developing Partnerships Model." These include:

1. Program and course planning.
2. Services marketing.
3. Resource development.
4. Data access.
5. Technical communication.
6. Services and material delivery.
7. Professional development.

Burge's recommendations would improve services of any academic library.

MacTaggart offers additional insights into the library needs of the distance student. Having evaluated schools as part of the accreditation process of the Western Association of Colleges and Schools, he admits there are few guidelines for off-campus library services. He defines "adequate

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<sup>19</sup> Elizabeth J. Burge, J E. Snow, J. L. Howard, "Distance Education: Concept and Practice," Canadian Library Journal 45 (1989): 330.



services"<sup>20</sup> as:

1. Cooperative agreements with local libraries.
2. Site-based collections.
3. Efficient, timely, and free retrieval services.
4. Adequately trained staff.
5. Library staff involved with faculty, staff, and students.
6. Library collections linked with curriculum offered.

Slade, Burge and MacTaggart describe improvements to services extended from a sponsoring institution's campus library. These improvements would enable the library to be used by the distance student as the primary source of information needed for research assignments, just as the campus library is used in a traditional on-campus setting. Studies have shown that factors other than adequate service can influence students' use of extended services. One of these factors is lack of knowledge about extended services. Studies have shown that distance students are not always aware of library services that are available (Burge; Lessin; Winter).

Other reasons for lack of use relate to problems with the technology used. A frequent assumption of many

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<sup>20</sup> Terrence J. MacTaggart, "An Accreditor's Perspective on Off-Campus Library Program's," in Off-Campus Library Services, ed. Barton M. Lessin (Metuchen, N.J.: Scarecrow Press, 1991), 80.

administrators is that technology can solve any problem. Kopp outlines the many technological advances that can be used to address the challenges of distance education. He also cautions that the technology can easily become more of a problem than a solution.<sup>21</sup> The hardware and software employed in the campus library must be compatible with that of the student. Library staff, teachers, and students must possess a sufficient level of technical competence for the system to work effectively.

In addition to mechanical problems, studies by Karabenich<sup>22</sup> and West<sup>23</sup> show that even when services are available through telecommunications, students prefer to interact with a person when they need help finding information so they may avoid using the extended services.

Library anxiety can also limit a student's use of extended services. Mellon collected data from 6,000 undergraduate students to develop a grounded theory of

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<sup>21</sup> James J. Kopp, "Can I Get There From Here? Technology and Off-Campus Library Programs," Library Trends 39 (Spring 1991): 550.

<sup>22</sup> Stuart A. Karabenich, Computer Conferencing: It's Impact on Academic Help-seeking (ERIC, ED 352 016, 1987), 69.

<sup>23</sup> Sharon West and Steven L. Smith, Meeting the Information Needs of Rural Alaskan Students: A Strategy for Delivery (ERIC, ED 342 530, 1991), 10.

library anxiety.<sup>24</sup> Students in the study noted feeling "lost." Mellon grouped students' statements into four categories: (1) overwhelmed by the size of the library; (2) a lack of knowledge about where things were located; (3) not knowing how to begin; (4) not knowing what to do. If students express these feelings of inadequacy while in the library where help is readily available, it is likely that fears would be magnified when the library is available only through telecommunications. A sense of anxiety could also be compounded when the library used is not familiar. Students who are not associated with a traditional campus program may feel like interlopers using an academic library of a college in which they are not enrolled.

A well-known study by Hardy showed that when choosing a source of information, seekers evaluate sources on the basis of their cost and benefits. Hardy's study found that "ease of accessing information has greater importance to information seekers than the amount of quality of information available."<sup>25</sup> This study indicates that both the traditional student and the distance student would

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<sup>24</sup> Constance Mellon, "Library Anxiety: A Grounded Theory and Its Development," College and Research Libraries 47 (March 1986): 162.

<sup>25</sup> Andrew Hardy, "The Selection of Channels When Seeking Information: Cost/Benefit vs. Least-Effort," Information Processing and Management 18 (June 1982): 290.

prefer information sources that are easily accessible and familiar.

Only a few researchers tried to verify what sources students used when seeking information for their academic assignments. Dunn identified five categories of sources used by students enrolled in a traditional campus program: (1) family, (2) friends, (3) libraries, (4) experts, (5) personal materials.<sup>26</sup> Her study suggests that students with strong other-centered needs use family as sources of information more frequently than libraries or friends; subjects with a strong need to be successful in college tend to seek friends and libraries as information sources. When students ranked information sources by order of importance, the top five were: (1) teachers, (2) academic libraries, (3) expert in a field, (4) personal library, (5) friend.

In order to develop a more focused understanding of the needs of distance students, Wilson surveyed students in four classes offered through Open University in Great Britain regarding their selection of information sources.<sup>27</sup> When seeking statistical data for an assignment, students used

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<sup>26</sup> Kathleen K. Dunn, "Psychological Needs and Sources of Linkages in Undergraduate Information-Seeking Behavior," College and Research Libraries 47 (1986): 477.

<sup>27</sup> T. D. Wilson, "Learning at a Distance and Library Use: Open University Students and Libraries," Libri 28 (December 1978): 272.

public record offices, local government offices, local libraries, church records, local museums, family records, political party records, and local newspapers.<sup>28</sup>

Burge's survey of distance students in Canada showed that they preferred locally available sources. She quantified her findings by percentage of use. When additional readings were recommended for a class, sources used were: 24% from deposit collections; 18% from other academic libraries; 17% from public libraries; 15% from tutors; and 12% from friends.<sup>29</sup>

In Australia, research by Winter showed that for off-campus students public library usage is second only to the use of personal collections.<sup>30</sup> A study by Miller revealed that off-campus students often completed courses without the use of any library.<sup>31</sup>

Power recently surveyed the distance education students enrolled at California State University, Chico, and

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<sup>28</sup> Open University offers no extended library services. Students must rely on local resources.

<sup>29</sup> Burge et al., 330.

<sup>30</sup> A. Winter, "Off-Campus Students: Their Needs for Reference Material and the Influence of the Off-campus System in Which they Study," Open Campus 9 (1984): 99.

<sup>31</sup> K. A. Miller, et al., "Library Use and Preferences: A Comparison of On-Campus and Off-Campus Students at the University of Wyoming," Library Services to Off-campus Students, Second Articulation Conference (1984).

identified use by the students of seven types of libraries.<sup>32</sup> Response by 102 students revealed that 80% had used local academic libraries, 67% had used local public libraries, 37% had used their personal library, and a few others had used military base, medical, school, and business libraries. Power did not address the option that students could also use their friends, bookstores or work place as information sources. Since the distance students enrolled in the Chico program are all located in rural areas, these options may often have been employed.

In 1993, Slade sponsored a survey of distance education students enrolled in six universities in Canada. The data were collected by telephone interview of 15 students in each institution. An extensive questionnaire was used to "determine the extent of students' use of local resources for course purposes,"<sup>33</sup> and their use of the extended library services. Using a combination of multiple choice and open-ended questions, ninety undergraduate students were interviewed. Participants were drawn from students who had contacted the sponsoring institution's library to request

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<sup>32</sup> Colleen Power, e-mail interview with the author, 14 April 1994.

<sup>33</sup> Alexander Slade, "Inter-University Library Survey of Off-Campus Students in Western Canada," Photocopy, (July 1993): 1.

materials or assistance for their off-campus courses.<sup>34</sup>

The results of the survey revealed 61% of the students used local public libraries, 81% borrowed materials from friends and classmates, 60% used bookstores, and 35% made use of academic libraries; 28% responded that they had used only the extended services and no local libraries. The survey did not specify which of the extended services students used. Slade made no attempt to interpret the results or to apply the information to improving extended library services.

Although some recent studies have attempted to identify the sources used by distance education students, the information gathered was presented without analyzing the data to form conclusions. Each of the recent studies were sponsored by institutions which surveyed their own students. No attempt was made to link the data to other studies about student information source selection. Research is needed which includes a broad range of students participating in programs employing several methods of distance education. In this way, data gathered will represent distance education students as a whole rather than an individual program. Previous studies were primarily interested in identifying

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<sup>34</sup> This would indicate that each of these institutions offers extended library services and the students are aware of the services.

which types of libraries students used. Distance education students may have a broader definition of information source that encompasses sites other than libraries. An accurate description of student behavior should account for any type of information source they select.

The literature does not address what types of materials are used at the various sites. No studies in distance education have considered if source selection is influenced by the kinds of materials needed.



## CHAPTER 3

### Methodology

#### Collection of Data

The research question posed in the first chapter asked, where do students involved in distance education look for information and what factors influence their choices? Because these students do not have immediate access to an on-campus library, it can be assumed that they must first identify a source for information before they can seek the information they require for their assignments. A few studies have attempted to describe the use of various types of libraries by distance students.

Some institutions have conducted research to identify information sources selected by students in their own programs. This study attempts to identify a broader variety of information sources used by students in several distance education programs.

By definition, distance education students are geographically dispersed. Reaching students enrolled in several programs throughout the United States required the use of a self-administered survey delivered by mail.

### Survey Components

The survey was designed to identify the sources used by distance education students. (See Appendix A.)

The survey identified:

1. Where students look for information when there is no campus library.
2. Why these sites were chosen.
3. What types of materials are used at various sites.
4. Which extended services offered by the central campus library are being used.

Demographic information collected in the survey included age, gender, employment status, enrollment status, classes in which students were currently enrolled, and degree programs.

The survey was administered to students enrolled in post-secondary degree programs offered through some method of distance education. The survey was developed to identify locations used by students for information. This study targeted specific places as information sources and did not identify individual people as information sources. The survey was mailed to students enrolled in a distance education program with a stamped, return envelope. It was purposely kept short and addressed where students go to find

information for their assignments. The questions were first posed in an open-ended format. Students were asked to list where they sought information, why these places were chosen and which was most helpful. The cover letter encouraged them to list places they went to seek information, not where they went to study. The cover letter also encouraged them to list places they actually had gone for information, not places they thought could be possible sources. The fourth question asked if their institution offered any extended library services and, if so, which services were used. On the second page, nine possible information sources were listed. Students were asked to check all the places they had used as information sources. The last page contained a matrix the students marked to show what types of materials they acquired at each place.

The survey was pretested with a sample group to insure that the wording of the questions solicited answers from the participants that reflected the intent of each question.

Surveys were mailed to 284 students who fit this study's profile. Surveys were returned, by 139 giving a response rate of 49%, although only 134 surveys were usable. As far as possible, data from the surveys were categorized using terminology used by the respondents without subjective interpretation. The demographic data collected revealed that the population sampled in this study closely fit the

demographic characteristics cited by Wilkinson and Sherman. Mean age was 37.8 years, with a range from 23 to 71 years. Of the respondents who indicated their employment status, 74% were employed full-time, 11% worked part-time and 15% stated they were not employed. Of the respondents who listed their gender, 62% indicated female and 38% indicated male.

Participants indicated their enrollment status: no Freshmen; 2 Sophomores; 22 Juniors; 44 Seniors; 62 graduate students; no doctoral students; and 2 did not indicate their status. In the 1991 survey by Wilkinson and Sherman of 276 higher education distance education programs, 82.9% of the institutions offered predominantly undergraduate programs. The total number of students represented by that figure was not given. Of the eight institutions in this study, five offer only undergraduate courses, two offer both undergraduate and graduate courses, and one offers only graduate courses. This closely follows the findings of the Wilkinson and Sherman study. Nearly half the respondents in this study are graduate students. This high percentage of graduates may indicate that this sample group is not fully representative of the total number of students enrolled in distance education.

Postmarks indicated participants were located in a variety of geographic locations: 28 states with the majority

residing in California, New York, and Virginia. Both urban and rural areas were represented.

The participants in the survey were drawn from eight colleges which offer a distance education program. All of the students were enrolled in a postsecondary program working toward a degree, either baccalaureate or master's. No students were included who were studying for personal satisfaction or to fulfill job requirements. The institutions did not have branch libraries but some offered extended library services from the main campus. The distance education curriculum was delivered by several media: video, print, broadcast courses, branch sites, and computer-based technology. The Wilkinson and Sherman study revealed video-based technology as the most common media employed in distance education and print-based media the second. This is similar to the sample used in this study with one exception. One institution in this study had students meet in classrooms at locations remote from the main campus to receive instruction from a teacher in person. This is not typical of programs of distance education. Since this study was not concerned with the students' interaction with the instructor but rather with their information seeking behavior when there was no campus library available, this institution was included.

The eight participating institutions are designated in

this study by the letters A, B, C, D, E, F, G, and H. The institutions were chosen on the basis of two criteria: a student population that fit the study's guidelines, and a willingness to participate. A small sampling from several institutions was sought rather than a large sampling of a few institutions in order to achieve three objectives: (1) including a variety of education methods, (2) targeting a variety of geographic locations, and (3) developing a general description of the information seeking of distance students rather than of students in a specific institution.

Thirty or forty students in each institution received a survey. The students receiving the survey were randomly chosen by parent institutions with the instructions that the students meet the following requirements: they be enrolled in a degree program; be enrolled in a course that required more material than that provided by the assigned textbook; any media could be employed to deliver the curriculum; and students could be working independently or in a group situation. The sample represented both undergraduate and graduate students.

Institution A is a campus of a state university system. Its distance program was developed to reach the rural population which did not have access to a state university campus. The program offers degree programs at the undergraduate level. Curriculum is delivered through

satellite transmission to sixteen learning sites. The system is a one-way video, two-way audio live broadcast of regular on-campus sessions. Extended library services are available in the form of access to the institution's holdings through a modem. Some support material in microform is available in a local community college library. Inter-Library Loan is offered but not delivery of articles. Students do their own searches and can use any avenue available to them to find documents they want.

Institution B offers only undergraduate courses through distance education. The curriculum is broadcast over cable television to students' homes. Study is done in the time frame of traditional semesters. The only extended library service provided is to make the Online Public Access Catalog of the host institution available through modem access. Students are allowed to check out materials from the three affiliate schools which are within the district of the main campus. The range of the cable broadcast is confined to an urban area with many library and information sources readily available.

Institution C offers graduate level courses through distance education. Instruction is designed specifically for the distance education program, videotaped, then broadcast to specific sites in several states. No extended library services are available.

Institution D is organized as a multi-campus college. Students meet in classrooms at several sites in two states. The curriculum is delivered by an instructor in person. The students study in a time frame of a modified quarter system which continues year-round. Although the students do have direct contact with the instructor, the school offers no on-site library services. The library at the main campus does offer access through a toll-free telephone number to a reference librarian. Database searches can be faxed or mailed to students and document delivery is offered. Books are available to be checked out from the main campus library, but since that library is in another state, few students take advantage of the service.

Institution E offers undergraduate degrees through correspondence courses or computer interaction. Students work independently taking one course at a time. They are allowed up to 24 weeks to complete each course, which has 8 assignments, a midterm, and a final examination. No extended library services are offered.

Institution F offers undergraduate degrees through a combination of correspondence study and two-way audio conferencing at remote sites. Students take one class at a time and have a flexible time frame in which to complete their studies. There are no extended library services offered.



Institution G offers undergraduate degrees through a combination of classroom study at remote sites and independent study. The degree program is arranged so that the students follow a specified sequence of classes which must be completed within a strict time frame. There are no extended library services offered and no branch libraries at the remote sites.

Institution H offers both undergraduate and graduate degrees through independent study. Class lectures are videotaped and the tapes are loaned to students for viewing at home at their own pace. Students take one class at a time. A librarian at the main campus library is available to students by telephone to make computer searches and borrow books from the main campus library. Document delivery is offered.

Results from the survey were tabulated to identify sources used by students overall, and the reasons stated for the selection of sources. Data about students' use of extended library services were examined. Responses were compared with the demographic information gathered to see if choices of sources varied by enrollment status or gender. Conclusions were drawn about the source selection behavior of the students.

## CHAPTER 4

### Analysis of Data

Data from the survey reveal a variety of sources used by students. Examination of data from the eight institutions revealed few differences between students from different schools, so results are presented using the population as a whole rather than by individual schools.

#### Sources Used

Table 1 shows the percentage of students using each

Table 1

#### Sources Used (n=132)

Source	N	%
Home	90	68
Public Library	106	80
Friend's Home	16	12
Academic Library	82	62
Bookstore	41	31
Work Place	50	38
Computer Database	47	36
Extended Library Services	40	30
Other	23	17

source listed in the multiple-choice part of the survey. Other sources indicated by the students included: base library, county office of education, museum, corporate library, family history center, law library, e-mail, church office, community meeting, and personal interview.

Most participants indicated the use of several sources for information. The average number of sources listed was 3.75. In responding to the open-ended questions, students used the words college library, community college library and university library as well as naming the library of some specific institutions. The term "academic library" in this study includes all of these. Half of the students used both public and academic libraries and half used only one or the other. The frequency of selection of the public library probably reflects the fact that public libraries are more numerous and geographically accessible than academic libraries. Materials held at home are very frequently used, indicating extensive home collections or the lack of time and/or library skills to search for material. Over one third of the total number of respondents listed work place as a source for information. Counting only the respondents who indicated they were employed, 45% noted they had used their work place as an information source. The high percentage could be typical overall or be skewed by the type of employment of participants in this study. Since students

did not indicate where they worked, no conclusion can be made. The high percentage seems to indicate work place is a frequent source of information.

Some difficulty is encountered when interpreting data on the use of a computer database because it can be considered a source for information or the information itself. This dilemma was dealt with by asking about database use in two ways. On the second page of the survey, computer database was listed as a place to look for information. Later in the survey it was categorized as a type of information that could be found at several locations. Table 1 indicates the use of computer databases by students as a source for information. Table 5 indicates where students used computer databases when looking for information. Within the limits of this survey it was not possible to gauge students' ability to differentiate between an online database, a CD ROM, or a library catalog. For the purposes of this study, all were considered under the heading of computer database.

In this part of the survey, the uses of extended library services were not itemized. The number indicates only that some services were used by 30% of the students. More detailed analysis is presented in Table 9.

The sources that students indicated were most helpful were academic libraries 42%, public libraries 31%, and

extended library services 11%. It is interesting to note that public libraries were used more often, although responses to question 3 indicated academic libraries were considered more helpful. Since everyone in the sample was working toward an academic degree, it is reasonable to consider that the information sought was more of a scholarly nature such as would be found in an academic library rather than the broader array of materials in a public library collection.

#### Sources for Journal Articles

The comparison between use of public and academic libraries revealed different items were sought at each

Table 2

#### Sources Used for Journal Articles (n=132)

Source	N	%
Home	57	43
Bookstore	11	8
Friend	13	10
Work Place	40	30
Academic Library	69	52
Public Library	77	58

location when students responded where they sought specific

items. Table 2 shows that journal articles were most frequently found in public libraries.

When students looked for books, the public library was a favored source. Taking into account the fact that academic libraries usually allow check-out privileges only for their own students, this survey appears to indicate that students develop precise and focused strategies to locate and acquire needed material.

Sources Used for Books

Table 3

Sources Used for Books  
(n=132)

Source	N	%
Home	73	55
Bookstore	43	33
Friend	16	12
Work Place	37	28
Academic Library	72	55
Public Library	90	68

These data indicate that one third of the students obtain books from a bookstore but most utilize this resource in addition to public and academic libraries. Only four

participants stated that a book store was their exclusive resource for books. This survey did not ask students to distinguish between reference books and books in circulation. Books here are defined in the broadest sense of printed material in a bound format.

#### Sources Used for Statistics

To gauge students' use of reference material the survey asked where they seek statistical information. Although statistics are only one type of information found in reference books, it can be used as an indicator of specialized reference sources.

Table 4  
Sources Used for Statistics  
(n=132)

Source	N	%
Home	27	20
Bookstore	5	4
Friend	3	2
Work Place	22	17
Academic Library	44	33
Public Library	44	33

Table 4 indicates that students sought statistical information mostly in academic and public libraries. Although these would be considered the most common sources for this type of reference information, students were able to identify other options.

#### Sources Used for Database Access

Students are becoming accustomed to the change from paper format to electronic format for the storage of information. Many seek out computer databases to find books cataloged, journal articles indexed and information listed. Traditionally such information was available only in

Table 5  
Sources Used for Database or Index Access  
(n=132)

Source	N	%
Home	44	33
Bookstore	4	3
Friend	2	1
Work Place	43	32
Academic Library	52	39
Public Library	24	18



libraries. The advent of new technologies has made information available from many places. Table 5 shows where distance students looked for information stored in computer databases.

These data show students were able to access computer databases from libraries as well as their homes and work places. Several respondents when answering the open-ended questions indicated they used commercially available information resources, such as CompuServe, from their homes. Several more said they had access to Internet at work. The use of academic libraries as a source for database information indicates that the students were looking for scholarly material indexed in a variety of commercially produced databases such as Psychological Abstracts that are commonly available in academic libraries but not in public libraries.

#### Reasons for Source Selection

Tables 1 through 5 have shown that students are able to identify common and uncommon sources for a variety of information. To develop a more complete understanding of the process of selecting an information source, the reasons must be examined for their choice of sources. Table 6 lists all the reasons stated in response to the open-ended question asking why students chose the locations they

listed. Students gave an average of 1.3 reasons. As stated earlier in this study, every attempt was made to list responses using students' exact words. Although the list is long, many terms were used repeatedly by students and each term was counted separately.

Table 6  
Stated Reasons for Source Selection\*  
(n=132)

Stated Reason	N	%
Complete Resources	46	35
Convenient	40	30
Location	19	14
Easy Access	15	11
Only Resource Available	11	8
Most Current Information	2	2
Helpful Staff	2	2
Limited Time	4	3
Availability	6	5
Familiar	8	6
Needed a Specific Item	4	3
Live Far From a University	1	<1
ILL Offered	2	2
Can Check Out Material	1	<1

Table 6 (continued)

## Stated Reasons for Source Selection\*

Stated Reason	N	%
Public Library in Unsafe Area	1	<1
Extended Service Too Slow	2	2
No Charge for Use	3	2
Variety of Materials	1	<1
Open on Saturday	1	<1
Good Parking	1	<1
Computer Access	1	<1
Microfilm Available	1	<1
Informative	1	<1
Logical	1	<1

\* Students listed as many reasons as they wanted.

When similar terms are grouped into a few composite categories, the list reveals an important characteristic of distance students. "Convenient," "Easy access," and "Location" are similar enough to group together under the term "Convenience." All imply the source was used because few difficulties were associated with its use. "Complete resources," "Variety of materials," and "Most current information" can also be grouped together under a composite term "Content." Each term describes a location chosen

because of its materials.

To determine the frequency of a composite term, any of the three terms is counted only once when stated by a student. Duplicate responses are eliminated rather than giving double weight to the composite term. The composite term "Convenience" is listed 65 times by students, representing 49% of the respondents. The composite term "Content" is listed 48 times representing 36% of the respondents. Analysis of the composite terms indicate convenience is a primary determinant in source selection. This supports Hardy's study of Forest Service Practitioners. His study showed speed of access is more important than content, although not the sole determinant of use.<sup>35</sup> Valentine collected data from undergraduates in a traditional college setting who participated in a focus group. She states that "The dominant theme to emerge from the findings was that undergraduates tended to look for the easiest, least painful way to complete a research project in a timely and satisfactory fashion."<sup>36</sup> Her students employed search strategies that required minimal time in the library. Distance students who have been shown to have many

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<sup>35</sup> Hardy, op. cit., 293.

<sup>36</sup> Barbara Valentine, "Undergraduate Research Behavior: Using Focus Groups to Generate Theory," The Journal of Academic Librarianship 19 (1993): 302.

demands on their time can be expected to use similar search techniques.

Buckland identifies six possible barriers to accessing information: Identification, Availability, Price to the user, Cost to the provider, Understanding, and Acceptability.<sup>37</sup> From the perspective of the distance education student, Identification, Availability, and Price to the user would most often pose problems in access of information. Buckland includes in his definition of price money, time, effort, and discomfort. These elements have also been mentioned by respondents in this survey.

Some statements indicated choice based on a positive characteristic of the location, "Most current information," and some statements indicated why locations were not chosen, "Limited time." Respondents who indicated "Only resource available" listed, in both the open-ended questions and the multiple choice answers, as many sources used as other respondents. Of the 11 who listed this reason for their choice of sources, five lived in metropolitan areas and six were in rural areas. Although many of the other students were from similar rural areas, only six gave this response. This inconsistency could indicate that these respondents had an impression of lack of resources whether actual or not.

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<sup>37</sup> Michael Buckland, Information and Information Systems (New York: Greenwood Press, 1990), 78.

### Awareness of Extended Library Services

Data from three of the institutions which offer extended library services were examined to see how the services were used by students. These three institutions, A, D, and H, offer similar extended services: a toll-free phone number to contact a reference librarian, database search for pertinent journal articles, book loan from the main campus library, and inter-library loan service. Table 7 shows the great majority of students were aware of the services.

Table 7  
Awareness of Extended Services  
(n=63)

	N	%
Yes	57	90
No	2	5
Do Not Know	4	6

### Use of extended Library Services

Students living in rural areas could be expected to take advantage of extended services if few other resources were available. Students in urban areas could be predicted

to have access to more and larger information resources. Individual respondents were identified as being located in a rural or urban setting in two ways: postmark of the return envelope and identification of the sponsoring institution.

The students compared here were located in a variety of geographical locations: both rural and urban. Table 8 shows that roughly 50% of the total number of students in these three institutions took advantage of the extended services.

Table 8  
Use of Extended Library Services  
(n=63)

	N	%
Yes	34	54
No	29	46

The extended services that were used are explained in Table 9. Not all of the students identified how they used the extended services. These data reveal that students most frequently sought assistance in searching databases. As mentioned earlier, public libraries usually do not subscribe to indexes of scholarly journals. This extended service would be an essential element for student research. Care should be taken in developing generalizations based on the

small numbers of users.

Table 9  
Extended Services Used By Students  
(n=34)

	N	%
Database Search	13	41
Document Delivery	10	31
ILL	8	25
Reference Librarian	1	3

Sources Used Categorized by Enrollment Status

The data was analyzed to compare differences in responses when students were categorized by enrollment status. Respondents were divided into two groups, undergraduate and graduate students. Table 10 shows the differences in sources used by each group.

The survey encouraged students to indicate as many locations as they wanted. Both groups listed an average of 3.7 places used to find information but each group showed a preference of choices. Graduates tended to look for information more often in public libraries, academic libraries, their homes, and their work places.



Table 10  
Sources Used Categorized by Enrollment Status

Source	Graduate (n=62)		Undergraduate (n=68)	
	N	%	N	%
Home	35	56	54	79
Public Library	47	76	57	84
Friend's Home	5	8	9	13
Academic Library	45	73	36	53
Bookstore	11	18	30	48
Work Place	30	48	21	36
Computer Database	26	42	22	32
Extended Library Services	23	37	15	22
Other	8	13	12	18

Undergraduates more often sought information in public libraries, their homes, academic libraries, and bookstores. Perhaps the graduate students had developed better library skills through their years in school and so chose academic libraries more often as a source. It is also possible that their graduate work forced them to focus on more scholarly materials that would be found only in academic libraries. Undergraduate students could be expected to take a broader range of class subjects, possibly overview or introductory

courses not taught in depth. Information for class assignments could be more easily met by the type of collection held by a public library or by an undergraduate's personal collection. The vast percentage difference in the use of bookstores as a source for information is not easily explained. When this fact is combined with the greater use by undergraduates of their own home as a resource, a picture develops of a student who prefers to do his class assignments at home. This is especially interesting since slightly fewer of the undergraduates indicated they were employed.

No significant differences between these two groups were revealed by the data in stated reasons for choices.

#### Sources used Categorized by Gender

Data was analyzed to compare responses when the respondents were categorized by gender. The sources used by each group are listed in Table 11.

The most apparent difference in sources used by men and women is the choice of "Home." When responding to the open-ended question asking where they look for information, two men responded to the open-ended questions that their

Table 11  
Sources Used Categorized by Gender

Source	Male (n=49)		Female (n=79)	
	N	%	N	%
Home	47	96	51	65
Public Library	44	90	61	77
Friend's Home	1	<1	11	14
Academic Library	28	57	49	62
Bookstore	14	29	26	33
Work Place	22	45	25	32
Computer Database	14	29	29	37
Extended Library Services	14	29	24	30
Other	7	14	12	15

personal collections were quite extensive and met most of their research needs. The data from this survey does not reveal if men look for information in their homes because they own more information materials than women or if men adapt their assignments to accommodate material they already have. Men also listed "Work place" as a source more often than women. Women use friends as an information source more often than men. Table 11 indicates that men use public

libraries more often than women as a source for information. This finding disagrees with the results of a telephone survey done by Appavoo in 1988.<sup>38</sup> Her survey of Athabasca University's off-campus students found women used the public library more than men. Men mentioned slightly more locations than women; men listed an average of 3.9 places and women listed an average of 3.6 places.

Table 12 shows the stated reasons for source selection categorized by gender. The table reveals men most frequently stated "Complete Resources" as their reason for source selection (43%). This common response seems to be inconsistent with men's frequent use of "Home" as an information source (96%). The data in this study does not explain this apparent contradiction. It is possible that the divergent responses were not intended to be directly linked. The most common answer to the first question (of source) is not necessarily correlated with the most common response in the second question (reason for selection).

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<sup>38</sup> Patricia J. Appavoo and Lorin Hansen, "Profile of the Distance Education Library User," Research in Distance Education 1 (1989): 14.

Table 12  
Stated Reasons for Source Selection  
Categorized by Gender

Stated Reason	Male (n=49)		Female (n=79)	
	N	%	N	%
Complete Resources	21	43	23	29
Convenient	18	37	21	27
Location	9	18	10	13
Easy Access	5	10	10	13
Most Current Information	0	0	2	3
Helpful Staff	1	2	1	1
Limited Time	1	2	2	3
Only Resource Available	2	4	9	11
Availability	2	4	3	4
Familiar	3	6	4	5
Needed a Specific Item	1	2	3	4
Live Far From a University	1	2	0	0
ILL Offered	2	4	0	0
Can Check Out Material	1	2	0	0
Library is in Dangerous Area	0	0	1	1
Extended Service Too Slow	0	0	2	2
No Charge for Use	0	0	3	4

Table 12 (continued)  
Stated Reasons for Source Selection  
Categorized by Gender

Stated Reason	Male (n=49)		Female (n=79)	
	N	%	N	%
Variety of Material	0	0	1	1
Open on Saturday	0	0	1	1

Students were encouraged to list as many sources for information and reasons for source selection as they wanted but did not give reasons for the selection of specific sources. No other significant differences between men and women are revealed.

#### Summary of Survey Findings

The data from this survey have identified where students enrolled in distance education program look for material for their assignments. Students most often use the resources of public and academic libraries for books and journals but also use a variety of other options. Public libraries are not used as frequently to access databases or indexed material. This information is accessed in academic

libraries, students' homes or work places. Some differences in source selection were revealed when respondents were categorized by enrollment status. Both undergraduates and graduates indicated public libraries as the most frequent source used but subsequent choices varied by enrollment status. Graduate students tended to look for information more often in academic libraries, their homes, and work places. Undergraduate students more often looked for information at home, academic libraries, and bookstores. When students were categorized by gender, the choice of home and work place as information sources were indicated by men more frequently. Women listed friends more often as a source than men did. Other sources were listed with similar frequency by men and women.

Students list reasons for selection of an information source based on convenience more often than content.

When extended library services are offered and students are aware of them, 54% will use these services.

## CHAPTER 5

### Conclusions

It is important to compare the findings of this study with findings of similar studies. In her study of information seeking, Dunn interviewed undergraduate students who were seeking information for personal interest rather than course assignments. These undergraduates were enrolled in a traditional on-campus program. Dunn included various types of people who were each considered separate sources. Dunn's findings differ little from the results of this study. Although the sources are ranked in a different order, the sources named are the same with one exception. The sources listed in Dunn's study that are actual locations were ranked in this order: 1) Academic library, 2) Personal library, 3) Public library, 4) Bookstore, and 5) Friend's library. Students in this study ranked locations in a slightly different order: 1) Public library, 2) Home, 3) Academic library, 4) Work Place, 5) Database, and 6) Bookstore.

Burge's 1989 study of Canadian students in a program of distance education also included individual people as sources of information. The students in her study responded that when seeking libraries for information they prefer academic libraries over public libraries. Burge's study did



not indicate the enrollment status of students.

In Power's survey of distance students, the ranking of sources used was 1) Academic library, 2) Public library, and 3) Personal library. Overall, the results are very much in synch with this study and they tend to confirm each other.

Slade's survey of undergraduate students in distance education programs in Western Canada indicated a preference for public libraries for information, with more students using bookstores than academic libraries. Each of the institutions in Slade's study had a strong support system of extended library services.

#### Implications

This survey confirms the results of many other studies that show that students rely on sources other than libraries. The weight of these cumulative findings should alert library planners to reconsider how students can be most effectively instructed to seek information. Institutions offering programs in distance education must conform to the demand for "a program of library user instruction designed specifically to meet the needs of the extended campus community," as stated in the ACRL Guidelines for extended campus library services.<sup>39</sup> This issue must be

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<sup>39</sup> American Library Association, 355.

addressed to assure a quality program of distance education.

Traditional bibliographic instruction given to undergraduates often correlates the information to a specific campus library. Instruction useful to distance students would help them develop the ability to identify the type of information needed and an understanding of where different types of information are located. It might focus on a more universal knowledge of how information can be found rather than competency using specific reference tools. Five activities can be initiated to improve bibliographic instruction to distance learners.

1. Teaching students to identify the kinds of information available in the various types of libraries. This would enable students to differentiate between the popular holdings of public libraries and the scholarly collection of an academic library.

2. Building a basic understanding of indexing and classification schemes so students can use correct search strategies.

3. Providing a description of the kinds of services included in all libraries. Students should know that most public libraries as well as academic libraries offer interlibrary loan service.

4. Helping students understand terms frequently used by librarians so they are not confused by professional

terminology.

5. Assisting in identifying information sources in the students' geographic areas.

Tables 1, 10, and 11 all show frequent use of public libraries for information. As the number of distance education students increases, public libraries will more often be asked to meet the needs of these students. Because of financial constraints, public libraries are being forced to cut back on staffing and patron services. Institutions offering distance education programs cannot assume the responsibilities of library services can be transferred to the public libraries. The home institution must be sure students have an adequate level of library skills to help them identify all information sources available in their areas. Power addresses this issue, suggesting personal contact by the home institution librarian with the public and community college libraries used by the off-campus students.<sup>40</sup>

The data in Table 3 show students most often use public libraries for books. In responding to the open-ended

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<sup>40</sup> Colleen Power, "Dial Up Access to On-Line Catalogs and the Extended Campus Library Services Program," in The Off-Campus Library Services Conference Proceedings, ed. Barton M. Lessin (Mt. Pleasant, Michigan: Central University Press, 1987), 206.

questions asking where students look for material and why, many of the students expressed a problem with checking out books from their main campus library because the process was too slow or the book had already been checked out. This same problem occurred when arranging interlibrary loans. When students sought books at academic libraries located near them, they often were not able to borrow them. The use of public libraries as a source for books does not solve this dilemma if the students need scholarly material that is not usually contained in public library collections. A solution for this could be found if the institutions offering distance education made arrangements with an academic library near the student allowing him check-out privileges. This would be a better solution if it could be arranged without cost to the student.

If a sufficient number of students indicated frequent use of a specific library, the sponsoring institution could enhance that library's holdings by donating scholarly materials or developing some cooperative resource sharing arrangements. The local library would benefit from the gift of material and the students would have better access to needed information. Another alternative for improving access to scholarly material could be an arrangement by the sponsoring institution with a library at a remote site to keep a collection of material on reserve for the distance

students. The suggested arrangements would need to be made in a way satisfactory to both libraries.

Burge identified 24% of the students in her study used a deposit collection of material located at remote sites. The large percentage of use and the data in this study confirm that students prefer material accessed conveniently and locally. This would indicate that a deposit collection is a viable and relatively inexpensive option for extending library services from the home campus. Fisher clearly outlines the arguments for and against library collections at remote sites and discusses the various factors which influence any decision about separate collections. Data from this study seems to confirm Fisher's statement that the "main value of a library lies in the service it can supply immediately rather than in the back up service to which it can give access."<sup>41</sup>

Public and academic libraries are the preferred source when students are seeking information in journals or magazines. Students' responses to the open-ended questions did not indicate difficulty in locating articles. Usually these materials can be photocopied in any library without

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<sup>41</sup> Raymond K. Fisher, "Separate Library Collections for Off-Campus Programs: Some Arguments For and Against," in The Off-Campus Library Services Conference Proceedings, 1986, ed. Barton M. Lessin (Mt. Pleasant, Michigan: Central Michigan Press, 1987), 121.

the need to take them out of the library. Many copies can be made and still have the journal available for other students, whereas a book can only be borrowed by one student at a time. The extended library service can mail or fax a copy to the student more quickly than a book can be processed and packaged and shipped.

Institutions offering programs through distance education should explore the benefits that could be derived from the development of or purchase of databases offering full text articles. Students gain an advantage over their present situation when they can access and retrieve whole documents online. This solution will appeal to the students' desire identified in this study for information that is convenient and easily accessed. Generally there is a higher cost associated with the purchase of full text databases that is not worthwhile for traditional, on-campus, academic libraries. For those institutions which emphasize distance programs, however, the additional cost might be justified as an appropriate means of providing quality instructional support services. Cost is only one factor when considering making full text available. Other factors are site licenses, accessibility of graphics and tables in articles, and development of software to search and retrieve full text. Racine outlines the many elements that influence

a library's decision to offer full text journal articles.<sup>42</sup> More analysis of the total cost of document delivery needs to be developed by distance education planners.

When information held by a computer database is sought, the data show that the public library is not the most often used source. Indexes to scholarly journals are usually not part of a public library collection. This may explain why students more often use academic libraries, their work places, and homes as sources. Since many of the indexes used by students are now in electronic rather than paper format, students who are familiar with electronic access are at an advantage. Students who have a personal computer with modem are the ones who have the option to access computer databases, including indexes, from their homes. Academic libraries can help students by making more information available to students by remote access. Although not all students are comfortable with electronic access or have that option available from their homes, it is important to have the service available because gradually students will become comfortable and will acquire the equipment needed for access. Moreover, utilizing online information sources extends the information seeking skills of all distance

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<sup>42</sup> Drew Racine, "Access to Full-Text Journal Articles: Some Practical Considerations," Library Administration and Management 6 (Spring 1992): 101.

learners. If an institution includes remote access to its catalog and databases as part of its extended services, it may want to consider developing discount programs for computer purchases by its distance students.

When extended library services are offered and students know about them, these data indicate that 54% of the students will use them. Institutions offering extended service must evaluate the cost of the extended services if the services will benefit only half of the students.

Data from this study reveal the elements that students would include in an ideal information source.

1. One location which contains all pertinent material.
2. A location not distant from home.
3. Open enough hours each week to fit busy schedules.
4. No cost to use.
5. Information is accessed in ways familiar to the

students.

It is doubtful that this ideal can be achieved for every distance student. Using these elements as a guide, library planners can improve extended services and/or the students' research skills to try to remove barriers that make good information sources difficult for distance students to use.



### Suggestions for Further Study

This study included eight institutions offering distance education. A clearer image of the resource seeking behavior of distance education students will develop if the study is repeated using other research procedures. Data gathered by personal interview or focus groups could offer more precise information. A longitudinal study would reveal how students' information seeking evolves with experience.

Secondly, this study identifies only the locations students choose when seeking information. An important gap in the knowledge of the information seeking behavior of distance students is how they react to the material in various libraries. Do they feel uncomfortable in an academic library when they are not enrolled in its university? Would they be less likely to ask for help from the staff if they are not enrolled students? Data from Mellon's study of library anxiety indicate students believe that they should already know how to find information in a library and are hesitant to reveal their incompetence by asking for help.<sup>43</sup> Research would confirm if distance students react similarly to the undergraduates studied by Mellon.

Data from this study indicate that the work place is a

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<sup>43</sup> Mellon, op. cit., 163.

frequent source for information for distance students, yet no studies have researched its influence on students' information seeking behavior. Is there a correlation between the type of employment and frequency of use? What are the determining factors for work place as an information source? Are there specific types of resources available at work sites that should be considered in bibliographic instruction?

This study revealed distinct differences in the sources chosen by men and women. A follow-up study might verify these differences as valid distinctions in information source selection behavior. Are the differences in men's and women's behavior influenced by level of library skill, social interactions, or time constraints? These answers would help librarians understand any differences in how men and women seek information.

A study is also needed to identify a possible correlation between choice of sources and level of library skills. This knowledge would help librarians know if it is better to invest in increasing the amount of materials available to the distance education student or use funds to better equip him to identify and use the resources already available. Such knowledge would give librarians a basis from which to develop appropriate bibliographic instruction and other services specifically tailored to the needs and

operating strategies of distance learning students.

Any planning of library services to distance education students must take into account their unique behavior. Burge proposes a model for distance education that integrates the components of students, library staff, distance educators, resources, and professional development personnel. She challenges librarians to plan library programs utilizing these components and create an effective range of services greater in its impact than the sum of its parts. Meeting this challenge requires increased knowledge of the information needs and behavior of distance learning students and continuous emphasis on library research and planning.

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## APPENDIX A

Dear Students,

The purpose of this survey is to find out where students go to find the information they need for their assignments, such as a report or research project. The data collected will be used in my Master's thesis. Please list the places you went to find information when you needed more than the information in your textbook. Use the following guide:

- Tell where you went to get information, **not** where you studied.
- List the places you actually went to find information, **not** places you think you could have gone.

Please return the survey in the enclosed, stamped envelope before June 15, 1994. Thank-you for your cooperation!!

Sincerely,

Melinda Stasch

# ***SURVEY***

When answering these questions, give responses about your most recent class(es.) Use the back of the paper if you need more space.

1.) Where did you go to get the information you needed for research for your assignments?

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2.) Why did you choose the places you answered in question 1?

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3.) Which place did you find most helpful? \_\_\_\_\_

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4.) Does (name of institution) offer any library services for the off-campus students?    Yes \_\_\_\_\_    No \_\_\_\_\_

4a.) Have you used any of these services?    Yes \_\_\_\_\_    No \_\_\_\_\_

4b.) Which ones did you use? \_\_\_\_\_

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Please check the places that you have gone recently to find information for your assignments. Please check as many as apply.

- \_\_\_\_\_ Home (Personal Library)
- \_\_\_\_\_ Public Library
- \_\_\_\_\_ Friend's home
- \_\_\_\_\_ University /College Library
- \_\_\_\_\_ Bookstore
- \_\_\_\_\_ Work Place
- \_\_\_\_\_ Computer database
- \_\_\_\_\_ (name of institution) Library Service
- \_\_\_\_\_ Other (Please list)

Check the boxes that describe the kinds of material you used in addition to your text book for your assignments and where you found them. For each place listed, check as many materials as apply to you.

PLACES ---->

	Home	Bookstore	Friend	Work place	College Library	Public Library	Other
Articles							
Books							
Encyclopedia							
Atlas/Maps							
Statistics							
Other							
Computer (Indexes or Databases)							

DEMOGRAPHIC INFORMATION

This information will remain confidential.

Your Age \_\_\_\_\_ Male \_\_\_\_\_ Female \_\_\_\_\_

Are you employed? No \_\_\_\_\_ Part-time \_\_\_\_\_ Full-time \_\_\_\_\_

Please Check one that describes you: Graduate Doctoral  
Freshman \_\_\_\_\_ Sophomore \_\_\_\_\_ Junior \_\_\_\_\_ Senior \_\_\_\_\_ Student \_\_\_\_\_ Student \_\_\_\_\_

Most recent class(es) you were enrolled in:

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Degree you are working toward: \_\_\_\_\_